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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,771	02/05/2004	Yue Wu	030416	7899
23696	7590	11/21/2005	EXAMINER	
QUALCOMM, INC 5775 MOREHOUSE DR. SAN DIEGO, CA 92121			KINKEAD, ARNOLD M	
			ART UNIT	PAPER NUMBER
			2817	

DATE MAILED: 11/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/773,771

Applicant(s)

WU, YUE

Examiner

Arnold M. Kinead

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 6/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15, 19, 21-22, 24-26 A.K. is/are rejected.
- 7) ☒ Claim(s) 9-11, 23, 25 and 26 is/are objected to. A.K.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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DETAILED ACTION

*Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,2,3 4, 5,6,7,10-12, 15,16,17,18, 19,21, 22,24, 25 and 26 rejected under 35 U.S.C. 103(a) as being unpatentable over Welland et al (US 6,574,288) and further in view Suter(US 4,978,930 new cite).

The reference by Welland et al is relied upon to show the implementation of an integrated circuit with VCO for use in wireless communication system, for example, as the local oscillator, see figures 1, 3A,4,9A, and 10; with regards the use of this oscillator in the specific multiple access system see col. 1, lines1—col. 2, lines 54. which describe several multiple access systems and bands of operation including GSM; the CDMA band being in the 824Mhz+ region. These oscillators are used to generate the LO(100), see figure 1, with mixers(for conversion). Temperature compensation by way of reversed biased diodes, see figures 3, and 9A, are known(see col. 8, lines 30-35, and col. 13, lines 20-35, the large capacitance variation, if required, does require the reverse diode implementation...if a MOS type device is used then the parasitic diode capacitance is inherent. As shown in table 1, capacitive weighting is considered and respective MOS transistors for the frequency tuning, see figures 7,9B, and 10. The reversed bias diode will be biased

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appropriately with the proper reverse bias voltage. This reversed bias diode allows for temperature compensation which reduces drift. The method steps being inherent.

The reference does not show the actual reverse biasing with PTAT with varactor, current mirror and loading resistance details, however, these are conventional and will be highlighted by Suter for use with a generalized VCO circuit and varactor.

The reference by Suter discloses a VCO with temperature compensation by way of a band gap type circuit( see figure 1). The oscillator is shown (30) connected to a biasing circuit(10), see col. 4, that allows for a proportional to absolute temp(PTAT) control to allow for the reverse biasing of the varactor(note loading resistor(R2,R3). The method steps being inherent.

In light of the above it would have been obvious for one of ordinary skill in the art to have recognized that the VCO for use in wireless communications as disclosed by Welland et al would make use of such a PTAT band gap type circuit for allowing a reverse bias to be developed. This allows for temperature compensation.

*Allowable Subject Matter*

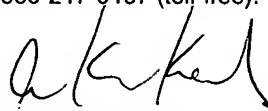
3. Claims 13, and 14, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnold M. Kinhead whose telephone number is 571-272-1763. The examiner can normally be reached on Mon-Fri, 8:30 am -5 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on 571-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Arnold M Kinkead  
Primary Examiner  
Art Unit 2817

Arnold Kinkead  
11-09-05